

Evaluation Of The Maternal Perinatal Audit Program (AMP) In Aceh Timur, Langsa City, And Aceh Tamiang, Indonesia

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Evaluation Of The Maternal Perinatal Audit Program (AMP) In Aceh Timur, Langsa City, And Aceh Tamiang, Indonesia

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KEYWORDS

Maternal Mortality Rate (MMR) Sustainable Development Goals (SDGs) Maternal and Neonatal Audit Program (AMP) Mixed-methods design Maternal and child health **Training** evaluation Health services quality.

ABSTRACT

The global maternal mortality rate (MMR) shows a concerning stagnation, with only a slight decrease during the Sustainable Development Goals (SDGs) period, from 227 to 223 per 100,000 live births. In Indonesia, the issue of MMR remains serious, with a recorded rate of 189 per 100,000 live births in 2020, exceeding the target set for 2024. Notably, Aceh has experienced the highest increase in MMR, indicating a need for stronger interventions and better access to quality maternal health services. In this context, evaluating the Maternal and Neonatal Audit Program (AMP) in Aceh is crucial for identifying and improving local policies and the quality of maternal and neonatal care. This study employs a mixed-methods design to evaluate the implementation of the Maternal Perinatal Audit program in three regions: Aceh Timur, Aceh Tamiang, and Langsa City, conducted from 2021 to 2023. The sample comprises 107 program holders for maternal and child health working in various facilities, including community health centers (Puskesmas), hospitals, and health offices. Data were collected through a specially designed questionnaire and analyzed descriptively to assess the effectiveness of services and challenges faced in program implementation. The results indicate that the AMP training was successfully conducted in Langsa City, while training has not yet taken place in Aceh Tamiang and Aceh Timur due to scheduling conflicts. The evaluation shows that Langsa City performed the best, with a training material relevance score of 95.2% and media quality score of 91%. Although Aceh Timur reported a comfortable training location, the lowest score was in the provision of teaching materials, which reached only 76.8%. Furthermore, post-training evaluations revealed a significant increase in participants' knowledge, with the average pre-test score in Aceh Timur rising from 55.6 to 77.5 after the training. These findings demonstrate that the training has successfully enhanced participants' contributions and performance in the workplace, with Langsa City recording the highest contributions. Tingkat kematian maternal global.

Introduction

Globally, the success in reducing maternal mortality rates achieved during the Millennium Development Goals (MDGs) stagnated in the first five years of the Sustainable Development Goals (SDGs) era, from 2016 to 2020[1], [2], [3]. According to WHO (2023), the global Maternal Mortality Ratio (MMR) in 2020 was estimated at 223 maternal deaths per 100,000 live births, showing a slight decrease compared to previous years, which recorded 227 maternal deaths per 100,000 live births in 2015. However, over a 20-year period, the global MMR decreased by about one-third (34.3 percent), from 339 maternal deaths per 100,000 live births in 2000 to 223 maternal deaths per 100,000 live births in 2020[1], [4]. Based on the calculation of the Average Annual Rate of

Reduction (ARR), the figure stands at 2.1 percent, indicating that the global MMR is estimated to have decreased by 2.1 percent per year from 2000 to 2020, although the actual decline was not uniform throughout this period. During the MDG era from 2000 to 2015, the average global ARR was 2.7 percent, but it dropped to -0.04 percent during the first five years of the SDG era (2016-2020).

The negative average ARR indicates a worsening of the global MMR, reflecting a general stagnation in the reduction of MMR during this latest reporting period[5], [6]. In Indonesia, the maternal mortality rate remains a serious issue, with a target of 183 deaths per 100,000 live births set for 2024[5], [7], [8]. However, the 2020 Population Census data indicates a higher figure of 189 per 100,000 live births, while current estimates from international organizations suggest 173 per 100,000 live births. In 2020, Aceh Province experienced the highest increase in MMR during the period from 2015 to 2020, recording 172 per 100,000 live births, with 157 maternal deaths. The highest number of deaths occurred in Aceh Utara, with 25 cases, followed by Bireuen with 16 cases[9]. The leading causes of maternal mortality include hemorrhage, hypertension in pregnancy, and infections. Meanwhile, the neonatal mortality rate in Aceh in 2020 was 7 per 1,000 live births, with a total of 734 neonatal deaths. This neonatal mortality is significant as it contributes to 74% of under-five mortality in Aceh. The Neonatal Mortality Rate (NMR) was recorded at 49 cases, and Under-five Mortality Rate (U5MR) at 58 cases in Aceh Timur, while in Aceh Tamiang, the NMR was also 49 cases. In Kota Langsa, the NMR was 23 cases and U5MR was 32 cases (DINKES, 2020). Efforts to accelerate the reduction of MMR are being made by ensuring that every mother can access quality maternal health services, such as antenatal care, skilled attendance during delivery, postnatal care for mothers and babies, specialized care and referral for complications, and family planning services including postpartum contraception[10], [11], [12], [13].

The government has established a program to assess the implementation of health services provided to mothers and children, so that challenges arising from obstetric and neonatal emergencies can be addressed. This program is known as the Maternal and Neonatal Audit (AMP). reporting stage, making it easier for staff to conduct assessments (Kemenkes, 2012). AMP activities have also significantly encouraged changes in local policies and improvements in the quality of maternal and perinatal healthcare, even in situations of limited resources[14]. However, the AMP typically conducted only covers direct maternal deaths, and indirect maternal deaths are likely to go unreported, leading to routine data being prone to under-reporting (DINKES, 2020). A survey conducted at one of the community health centers in Langsa City revealed that the person in charge of the Mother and Child Program stated that the AMP program has been implemented successfully. Therefore, this study aims to further analyze and evaluate the AMP in three districts (Aceh Tamiang, Langsa City, and Aceh Timur) in Aceh Province.

MATERIALS AND METHODS

This research adopts a mixed-methods design, combining qualitative and quantitative data to provide a comprehensive overview of the implementation of the maternal perinatal audit program at the Aceh Timur, Aceh Tamiang, and Langsa City Health Offices. The study was conducted from 2021 to 2023, focusing on these three districts. The target population for this research consists of program holders for Mother and Child health working in community health centers (Puskesmas), hospitals, and health offices in each area. The sample includes all program holders, totaling 107 individuals, thus providing a good representation of the program's implementation. The instrument used in this study is a questionnaire specifically designed to evaluate the Maternal Perinatal Audit (AMP). This questionnaire includes various questions related to program implementation, service effectiveness, and challenges faced during implementation. Data analysis was conducted descriptively by comparing indicator achievements with established standards and desired program outcomes. Outcome data were also compared with output aspects on an annual basis to provide deeper insights into the program's impact on maternal and child health.

RESULTS AND DISCUSSION

Training has been conducted in Langsa City, while in Aceh Tamiang and Aceh Timur districts, it has not yet taken place due to a busy schedule. The event in Langsa City was attended by program managers for maternal and child health from community health centers and hospitals, as well as members of the Maternal Perinatal Audit (AMP) from the Health Office. The training session ran smoothly, with an audience that was cooperative in answering questions. Participants arrived on time, and the number of attendees met the requirements set by the Health Office, which also provided the meeting room. An evaluation of the training was conducted to

identify the strengths and weaknesses of the program, in line with the evaluation function and framework for assessing the effectiveness of training within the organizational context. This approach has been recognized by Lin et al. (2011) as a simple and comprehensive model.

Table 1. Results of the evaluation and post-training evaluation elements based on the Kirkpatrick Model Level 1:

Elements	Sub Element	Aceh Timur regency		Aceh Tamiang regency		Langsa City.	
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		Weight (%)	Average per Element	Weight (%)	Average per Element	Weight (%)	Average per Element
Methods and Media	Feasibility of the observation/training location (room capacity, air conditioning)	91.3		89.3		88,2	
	Availability and quality of media (laptop, LCD, flipchart)	89.9	88	90.8	87,6	91	87,3
	Provision of learning materials/modules	76.8		79.6		80,4	
	Timeliness in providing learning materials/modules	92.8		90.8		89,8	
Relevance and Benefits	Relevance of training materials to the job	92.8		95,2		93,2	
	Possibility of applying training materials in practice	89.9	90	90,6	92,3	91,6	87,4
	Benefits of field observation	87		91		94	
Training	Comfort of the facility	89.9		88,5	90	84	88,3
Facilities	Provision of writing materials	88.4	90	87,2		89	
	Service and attitude of training organizers	92.8		90,9		92	
Catering	Meal and snack	91.3					87,6
	scheduling		93	89.5	90,6	85.5	
	Variety of dishes	95.7		91.7		89.7	
Facilitators	Mastery of the material	79.8		87,2		89,2	
	Punctuality	82		82,7		83,7	
	Systematic presentation	80		78,9		84,9	
	Variety of teaching methods (lectures,	82	80.9	83	83,8	85	85,7
	Q&A, discussions, etc.)	0.1		0.5		07	
	Language proficiency	81		85		87	
	Provision of motivation	81		83		85	
	Relevance of the speaker's responses to participants' questions	81		87		85	

The evaluation data from the training conducted in Aceh Timur, Aceh Tamiang, and Langsa City show varied results across different aspects, reflecting the strengths and weaknesses of each location. Langsa City recorded the best performance in several categories, with a very high relevance of training materials (95.2%), indicating that the content was highly suitable for the participants' jobs. The quality of the media used was also excellent,

scoring 91%, which signifies that the available resources effectively supported the learning process. Additionally, the mastery of the material by the presenters in Langsa City reached 87.2%, demonstrating good delivery skills.

On the other hand, Aceh Timur achieved the highest scores in the suitability of the training location (91.3%) and the service provided by the training organizers (92.8%), reflecting adequate facilities and support for participants. However, this location also recorded the lowest score in the provision of teaching materials (76.8%), indicating a need to improve the quality and availability of instructional materials so that participants can fully benefit from the training. Meanwhile, Aceh Tamiang showed good performance in managing meals, with a score of 93% for meal and snack times, reflecting attention to participant comfort during the training. Although all locations demonstrated good results in terms of facility comfort and the provision of stationery, there is room for improvement in several areas, particularly in the provision of teaching materials and the presenters' mastery of the content. Scores below 80% for the provision of teaching materials at all locations highlight the need for greater attention to ensure participants receive quality content. while Langsa City excelled in many aspects, this evaluation indicates that all locations need to collaborate to enhance the quality of training, particularly through strengthening the provision of teaching materials and the presenters' ability to deliver content effectively.

Evaluation of Post-Training Assessment Using the Kirkpatrick Model Level 2

The evaluation results for Level 2 are conducted to measure the level of knowledge and skills using pre-test and post-test data, which can be seen in the following Table 2.

Table 2. Results of Post-Training Evaluation Using the Kirkpatrick Model Level 2

Respondent	Aceh Tin	nur regency			amiang rege			gsa regency	
	Pre-test	Post-test	Differe	Pre-tes	t Post-test	Differ	e Pre-test	Post-test	Difference
	Score	Score	nce	Score	Score	nce	Score	Score	
1	58	80	22	49	78	27	60	85	25
2	57	70	13	53	80	27	62	83	21
3	56	75	19	52	81	29	65	80	15
4	53	83	30	63	82	19	58	80	22
5	52	70	18	60	79	19	56	81	25
6	62	80	18	55	78	23	54	82	28
7	58	75	17	54	80	26	60	90	30
8	55	85	30	58	82	24	59	87	28
9	57	70	13	57	84	27	59	78	19
10	45	75	30	49	80	31	58	81	21
11	53	73	20	53	79	26	61	85	24
12	53	83	30	52	79	27	63	90	27
13	53	80	27	60	80	20	58	82	24
14	54	76	22	53	82	20	64	80	16
15	59	75	16	56	81	25	62	85	23
16	57	75	18	52	84	32	58	80	22
17	58	85	27	50	83	33	56	81	25
18	58	83	25	54,7	80,7	25,6	54	82	28
19	54	70	16	Averag	ge		58	81	21
20	52	80	28	·			61	85	24
21	56	79	23				59,3	82,9	23,4
22	56	82	26				Average		
23	63	75	12						
24	53	80	27						
25	54	76	22						
26	59	75	16						
27	57	75	18						
28	58	85	27						
29	58	83	25						

30	54	70	16
31	53	80	27
32	54	76	22
Average	55,6	77,5	21,9

The post-training evaluation using the Kirkpatrick Model Level 2 shows a significant improvement in the knowledge and skills of participants in Aceh Timur, Aceh Tamiang, and Langsa City. The average pre-test score in Aceh Timur was 55.6, increasing to 77.5 in the post-test, with an average improvement of 21.9, indicating the effectiveness of the training. Although pre-test data for Aceh Tamiang is not fully available, some respondents noted significant increases in their post-test scores, with differences of up to 31. In Langsa City, some respondents achieved post-test scores as high as 85, signifying successful teaching. These results affirm that the training effectively enhanced participants' competencies and highlight the need for ongoing evaluation to improve the quality of training programs in the future.

Post-Training Evaluation Assessment Using the Kirkpatrick Model Level 3

The evaluation results at Level 3 are conducted to measure the changes in work behavior of training participants after they return to their work environment, directly related to the material presented during the training. This is carried out through direct observation in the participants' work environment or via questionnaires, as follows:

Table 3. Results of the Post-Training Evaluation Using the Kirkpatrick Model Level 3

Element	Sub Elements	Aceh Timur regency		Aceh Tamiang regency		Langsa city.	
		Weight (%)	Average per	Weight (%)	Average per	Weight (%)	Average per
			Element		Element		Element
Behavior	Percentage of Material Mastered	80.43	89.86	86.7	87,3	89.2	89
	Ease of Applying Training Material in the Workplace	88.96		87,9		88,9	

The table above illustrates that the changes observed in training participants indicate a high level of positive reactions, which have impacted midwives' work in conducting maternal and perinatal audits. Although the overall average score is below 100%, the behavioral evaluation data from Aceh Timur, Aceh Tamiang, and Kota Langsa show varied results. Kota Langsa recorded the highest percentage of material mastery, with a weighted average score of 89.2%, followed by Aceh Tamiang (86.7%) and Aceh Timur (80.43%), indicating that participants in Kota Langsa were the most proficient in mastering the training material. Regarding the ease of applying the training material in their work, Aceh Timur scored 88.96%, while Aceh Tamiang and Langsa city achieved scores of 87.9% and 88.9%, respectively, suggesting that participants in all locations found the training material relevant and easy to apply. Overall, these results demonstrate the success of the training in enhancing participants' understanding and ability to apply the material in their work context, with potential areas for improvement that need to be addressed, particularly in Aceh Timur.

Assessment of Post-Training Evaluation Using the Kirkpatrick Model Level 4

The evaluation results at Stage 4 are conducted to determine the impact of behavioral changes in training participants on their productivity levels.

Table 4: Data Evaluation of Behavior Related to Contributions and Post-Training Evaluation Using the Kirkpatrick Model Level 4 in Aceh Timur, Aceh Tamiang, and Kota Langsa

Element	Sub Element	Aceh Timur	Aceh T	Aceh Tamiang		Kota Langsa	
		regency	regency	7	city		
Behavior	Contribution of Training Material	79.71	84.41		86.2	_	
	Application to Work	_8	80.43	83.53		85.6	

Data from the behavioral evaluation regarding the contribution of training material application in Aceh Timur, Aceh Tamiang, and Kota Langsa shows positive results. For the contribution of training material application to work, Aceh Timur recorded an average weighted score of 80.43% with a weight of 79.71%, while Aceh Tamiang and Kota Langsa achieved 83.53% (weight 84.41%) and 85.6% (weight 86.2%), respectively. This indicates that participants in Kota Langsa perceive the greatest contribution from the training to their work. In terms of contribution to performance at the workplace, Aceh Timur recorded a score of 81.15%, Aceh Tamiang 82.65%, and Kota Langsa reached 85%. Overall, these results reflect that the training successfully enhanced the participants' contributions to their jobs and their performance at work, with Kota Langsa showing the best results in both sub-elements. Numerous studies underscore the importance of training in enhancing the performance of healthcare workers and its subsequent impact on healthcare delivery. For instance, research demonstrates that practice-based training significantly improves the clinical skills of healthcare providers, which in turn boosts their confidence in applying knowledge in real-world settings[15]. This study highlights that training involving simulations and hands-on practice not only reinforces technical skills but also prepares healthcare workers to effectively handle situations they may encounter in their daily work environments. Furthermore, found that increased access to training programs correlates positively with public health outcomes, including reductions in maternal and neonatal mortality rates. This indicates that when healthcare providers have opportunities for learning and development, the impact is directly reflected in the quality of care they deliver to patients [16]. Additionally, Frenk et al. emphasize the necessity of continuous education for healthcare workers to ensure they remain up-to-date with best practices and the latest technologies. Ongoing education not only enhances knowledge but also encourages healthcare providers to adapt to changes in health policies and medical innovations. Moreover, research by [17] shows that active engagement in training, such as group discussions and simulations, significantly improves knowledge retention and skill acquisition. This engagement fosters a dynamic learning environment where participants can share experiences and learn from one another, thereby deepening their understanding of the training material. further assert that well-designed training programs can enhance healthcare worker performance, patient satisfaction, and overall health outcomes [18]. This research indicates that effective training is beneficial not only for individual healthcare providers but also contributes to improved quality of care at the institutional level. Consequently, successful training initiatives positively impact patient experiences and their health outcomes. Overall, these findings illustrate that effective training not only enhances the competencies of individual healthcare workers but also contributes to the overall improvement of healthcare quality and public health outcomes.

Conclusion

The evaluation of the Maternal Perinatal Audit Program (AMP) reveals significant insights into the effectiveness of the training conducted in Langsa City, where the program was successfully implemented. Participants in Langsa City demonstrated a strong understanding of the training materials, which were highly relevant to their roles, and the quality of the media used during the training sessions was commendable. This positive outcome suggests that when resources are adequately allocated and training is effectively structured, participants are more likely to engage meaningfully with the content. In contrast, the training has not yet been conducted in Aceh Tamiang and Aceh Timur due to scheduling conflicts, which highlights a critical gap in the availability of training for health professionals in these regions. Although Aceh Timur reported a conducive training environment, it faced challenges related to the provision of teaching materials, which were insufficient for meeting the needs of the participants. This situation underscores the necessity for improvements in resource allocation and planning to ensure that all areas have access to comprehensive training programs, Furthermore, the post-training evaluations indicated a substantial increase in participants' knowledge, particularly in Aceh Timur, where there was a marked improvement in understanding following the training. This enhancement in knowledge not only reflects the effectiveness of the training program but also serves as a testament to the potential for future training initiatives to significantly impact participants' contributions and performance in their respective workplaces. In light of these findings, several recommendations can be made. First, it is essential to prioritize the scheduling of training sessions in Aceh Tamiang and Aceh Timur to ensure that all health professionals have the opportunity to benefit from the AMP training. Second, efforts should be made to enhance the availability and quality of teaching materials in Aceh Timur, as this is critical for the effective delivery of the program. Finally, ongoing evaluations and feedback mechanisms should be established to continuously assess the effectiveness of training programs and make necessary adjustments.

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